

Summary of Symposium 38 (GIAHS and Biodiversity Conservation) at Eco Summit 2007

1. Background

Organized by the Ecological Society of China and Elsevier and initiated by the International Association for Ecology, the Scientific Committee on Problems of the Environment/ICSU, International Society for Human Ecology, International Ecological Engineering Society, International Association for Landscape Ecology, and other tens of international and domestic institutions, took part in the great event in the fields of ecology and sustainable development. This Summit focus on integrative aspects of all ecological sciences and their applications with the general theme of "Ecological Complexity and Sustainability: Challenges and Opportunities for 21st-Century's Ecology". The aim of this Eco Summit is to encourage a greater integration of both the natural and social sciences with the policy and decision-making community to develop a better understanding of the complex nature of ecological systems, which attract the broadest representations of ecological organizations, ecologists and practitioners on ecological sustainability issues from all over the world. 13 world known scientists gave plenary presentations. There are over 80 symposia, oral sessions and forums. At the closing ceremony the **Beijing Ecological Declaration** was adopted.

Under the support of Food and Agriculture Organization (FAO)/UN, Wageningen International (WI), Center for Natural and Cultural Heritage at the Institute of Geographic Sciences and Natural Resources Research (CNACH/IGSNRR) of the Chinese Academy of Sciences and as one of the symposia, the symposium titled Globally Important Agricultural Heritage Systems (GIAHS) and Biodiversity Conservation was held in the afternoon of May 25, 2007. Prof. Min Qingwen, Deputy Director of CNACH/IGSNRR and Dr. Parviz Koohafkan, Director of the Environment, Climate Change and Bioenergy Division (NRC) in the Natural Resources Management and Environment Department (NRD) of the FAO/UN co-chaired the symposium. The main themes of the symposium includes: theories and methodologies of GIAHS conservation, roles of GIAHS in sustainable management of agro-biodiversity, main types of agricultural heritages and threats and challenges they are facing, experiences and lessons of GIAHS conservation and management, and linkage between GIAHS and rural and agricultural sustainable development. There are more than 20 abstracts received on this field and 10 presentations were given.

2. Main Presentations and Ideas

Dr. Parviz Koohafkan from FAO, in the presentation titled "Conservation and Sustainable Management of Globally Important Agricultural Heritage Systems", he noted that throughout centuries, generations of farmers, herders, forest dwellers and fisher folks have domesticated plants and animals and shaped harsh and remote environments to guarantee their survival. They developed complex, diverse and locally adapted agro-ecological systems to sustain their food

security and livelihood. These ingenious systems have been managed with time-tested combinations of techniques and practices that have usually led to family and community food security, creation of agro biodiversity and the conservation of natural resources. However, many of these systems are now under severe threats from global development challenges, including inadequate agricultural and trade policies, climate change, rural impoverishment, exodus towards urban areas and exclusion of local economies from international markets. Then he introduced the concept, connotation of and approaches to GIAHS dynamic conservation and adaptive management, especially the progress of the project.

Academician Li Wenhua, director of CNACH/IGSNRR, gave a splendid presentation titled “Ecological Agriculture and Agriculture Heritage in China: From Tradition to Innovation”. Based on a brief summary of the achievements of China’s agriculture, he analyzed the some challenges faced, introduced China’s eco-agriculture which is different from western eco-agriculture but similar to sustainable agricultural development. He emphasized that the future research should focus on some fields such as refinement of the concepts and principles, carrying out an integrated survey and comprehensive appraisal of different patterns, performance of in-depth studies on the structure and function of different types, refinement methods for assessing the integrated economic, ecological and social effects, improvement of the technological systems used, determination of appropriate infrastructure and organization to enable implementation of the ecosystems, capacity building at four levels (decision makers, professional, technicians, and users) and international cooperation.

Based on the pilot site of Traditional Rice-Fish Agriculture in Qingtian County, Zhejiang Province, Prof. Min Qingwen, in his presentation titled “China’s GIAHS Conservation: Practices and Experiences”, summarized the main experiences of China’s GIAHS Conservation including: government support and policy perfection are the strong guarantee for GIAHS conservation; multiple participation is the base for co-burdening responsibility and sharing benefits of GIAHS conservation; traditional cultural passing-and-following plays essential role for long-term conservation of GIAHS; scientific research and technical popularization infuse new vitality of traditional agricultural practices; and the realization of multi-values of GIAHS and relevant industrial development provide economic base for GIAHS conservation.

In his presentation titled “The Role of Agricultural Heritage Protection and Utilization in the Current Three Rural Issues”, Professor Xu Wangsheng from Agricultural Museum of China analyzed the characteristics of both tangible and intangible heritages of traditional agriculture and explored the roles and significances of agricultural heritage systems in present and future development of socio-economic and cultural societies, especially the roles of traditional livestock and crop varieties in plant species and animal breeding, maintenance of biodiversity, eco-environmental protection, food and livelihood security; the roles of agricultural and rural folk regulations in rural communities development ; and the roles of traditional agricultural heritage and landscape (e.g. villages, irrigation works) in the eco-tourism, museums and other cultural development.

MaryJane Delacruz from FAO, expressed their team’s thinking about “Institutional Mechanisms to Support Dynamic Conservation of GIAHS”. She got the important conclusion: the project achieves its objectives by developing a conducive environment for the GIAHS community; such environment is created by a variety of stakeholders with different tasks and different agendas active at different levels; and these stakeholders align their activities around concrete task areas.

Professor Lu Qi from IGSNRR, CAS gave a presentation titled “Rediscovery of Some Important Concepts in the Traditional Agriculture of China”. He analyzed the costs paid by modern agriculture taking China’s agricultural development in last 50 years as an example and described some important concepts in traditional agricultural models and their significances to sustainable development. At last he provided some suggestions to the application of traditional knowledge.

In her presentation titled “Valuing Environmental Externalities of Agriculture: A Case Study in Zhenjiang”, Dr. Yao Lv, from IGSNRR of CAS, introduced her research results: net value of environmental externalities is as high as +US\$ 4.74×10^9 /a, which is 44% of local GDP and almost equals to the gross output value of farming in 2005; crop and soil are most important carbon sinks in Zhenjiang; although both GHGs emission and agricultural NPSP have negative impacts on environment, agriculture in Zhenjiang has still shown huge positive environmental externalities.

Dr. Xiao Yu, from IGSNRR of CAS, in her presentation titled “A Primary Study on the Ecosystem Services by the Traditional Rice-fish Agriculture in Eastern China”, taking a Shanghai-based farm for an example illustrated the ecosystem services of routine paddy rice planting. The integrated economic values of ES by the rice paddy in Shanghai were 3 to 7 times of the economic values of primary products (the value recognized by most people). She noted that traditional rice-fish agriculture has not only regular eco-services similar to routine paddy rice agriculture as primary production, gas regulation, water regulation, and so on but also has its own characteristics, especially cultural and spiritual symbol, tourism, biodiversity conservation..

Mrs. Li Qi, from Nanjing Agricultural University, in her presentation named “How Hanis Control Insect Pests”, introduced Hani’s basic information, specific environment, traditional agriculture techniques, varieties exchanging, and analyzed the local ingenious culture to biodiversity conservation.

Yuan Weiling, from Huazhong Agriculture University, gave the presentation titled “The Effect of Rice-Duck-Fish Complex Ecosystem on Zooplankton of Rice Fields”. She discussed the influence of rice-duck-fish intergrowth on the species, quantities, diversity, and biomass of zooplankton of the fields, which offered a research method of zooplankton diversity and gave some theoretical directions to reasonably duck and fish raised, and standardize the technology of rice-duck-fish ecosystem.

Apart from the presentations mentioned above, other interesting abstracts submitted include: Sikkim Himalayan-Agriculture: Improving and Scaling up of the Traditionally Managed Agricultural Systems of Global Significance submitted by Ghanashyam Sharma from UNU; “Contributions of Fishermen’s Local Ecological Knowledge to Fish Ecology and Management in Southeastern Brazilian Coast” submitted by R A M Silvano from Brazil; Why Traditional Fisheries and Nature Conservation Legislation Fail to Protect the Diversity of Marine Species: a Case Study of Swedish Law and EC Law submitted by Anna Christiernsson from Sweden; GIAHS: An Effective Approach to Agrobiodiversity Conservation submitted by Zhang Dan from China; On the Cultural Value of GIAHS-China and Local Tourism Development submitted by Sun Yehong from China; Rice-Fish Culture in China: Benefits, Challenges and Opportunities submitted by Yang Guangmei from China.

3. Other Activities

During the 3rd Eco Summit, FAO, CNACH and Qingtian Government People's Government made an exhibition on Globally Important Agricultural Heritage Systems and Its Practices in China. Many participants expressed their interesting to this concept and project. In the exhibition There are some posters about brief introduction to GIAHS, basic information of five GIAHS pilot sites, i.e. Andean Agriculture (Peru),Chiloé Agriculture (Chile) , Ifugao Rice Terraces (Philippines), Oases of the Maghreb (Algeria, Tunisia), Rice-Fish Agriculture (China), main activities about traditional rice-fish agriculture in Qingtian, and other traditional agricultural systems in China.

During the period of Eco-Summit, Mr. Koohafkan was interviewed by CCTV and Science Times newspaper. He introduced the idea and of GIAHS, characteristics and significances of GIAHS to modern agricultural development and the implementation of sustainable development strategy, contribution of China's traditional agricultural practices to the world. Mr. Koohafkan stressed that **“GIAHS is not about the past but it is about the future”**.